Price $1.50

Section 78

GRAFMATIC® "23"

SHEET FILM HOLDER

SERVICE INSTRUCTIONS & PARTS CATALOG

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GRAFLEX | GENERAL PRECISION

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1. INTRODUCTION

This section of the Service Parts Manual covers the Grafmatic "23". The text and illustrations cover disassembly, cleaning, reassembly, operations, troubles, and lubrication.

The Grafmatic film holder is an automatic magazine holding six individual sheets of cut film. Besides indicating the exposure number, it has an indicator to tell whether the film is in the exposed position or covered. If the Grafmatic holder is used in a 2-1/4 x 3-1/4 Graphic Back, an additional set of spacer washers may be required beneath the focusing panel springs at the point of attachment to the camera to allow easier insertion of the holder. Since Graphic Backs do not lock the Grafmatic in place, be careful not to pull the holder out or lift during the cycling operation.

2. OPERATION

Two movements are required - - PUSH and PULL. When pulling the slide or film compartment, pull straight outward -- not backward -- to avoid leverage pressure against the focusing panel or slide locks with possible danger of light leak. First check to see that the exposure counter dial is turned (use the edge of your thumb) so that number "1" appears, and that the chrome slide lock hook is turned to allow operation of the dark slide.

Pull the slide all of the way out and push it all of the way back. The first film septum will spring upward and be locked in the exposed position and the red dot at the back of the holder will be uncovered indicating that a film is in position ready for exposure.

After exposure the first film must be moved out of the way. To do this, press down with your thumb on the chrome latch, holding it against the slide handle, and PULL the entire film compartment all of the way out. Release the latch and PUSH the entire compartment in with the handle. When it is all of the way in, the exposure counter dial will move to No. 2. and the red dot will be covered indicating that the film is covered and the holder can be removed from the camera.

The same sequence is followed for all six exposures, after which an "X" will show on the exposure counter dial and the slide will be locked into the compartment indicating that you have made six exposures.

NOTE: The Grafmatic holder must be in the camera when the septums are being shifted. The film will be fogged if the film compartment is opened when the holder is not in the camera. To prevent accidental opening of the drawer, be sure the counter dial is set at a numbered position. To release the slide for recycling or loading turn the dial to No. 1.

To load or unload the Grafmatic film holder set the indicator dial on a number, press the chrome latch towards the handle and pull the film compartment out. Hold the compartment in this extended position, and PUSH the slide handle in until it releases the chrome latch, then PULL the slide out. The film septums have springs under them and will pop up. When loading the septums, keep the film notch over the notch at the open edge of the septum.

Before putting the septums back into the compartment, be sure that the counter slide, by the felt strip, has been pushed back out of the way, into the end of the film compartment.

CAUTION: When the holder is open for loading, note that slight pressure on the button on the underside of the film compartment will release the automatic exposure counter slide. If the holder is laid on a flat bench, no difficulty will be encountered; otherwise, it will be necessary to make sure that this slide does not extend into the septum chamber before attempting to insert the septums - failure to do so may result in jammed and bent septums.

When loading septums into the film compartment use the thumb and finger, holding them to act as a channel, guiding the septums down into place. All six septums must be in the compartment in order to operate the counting mechanism.

3. INSPECTION AND TROUBLES

Many troubles encountered by the repairman will be very obvious, while others will not be too apparent. The following table of potential troubles, causes, and remedies is supplied so that difficulties may be promptly recognized and proper steps taken to overcome them. Before disassembly check for loose or missing screws and sliding surfaces that are binding because of lack of lubrication.

TROUBLE	CAUSE	REMEDY
Drawer binds.	Lack of lubrication on edges.	Apply paraffin.
Drawer pulls out.	Missing drawer stop screws-screws work loose through vibration.	Replace parts - seal screws in place with Glyptol or lacquer.
Septums bent.	Improper loading or handling of septums.	Replace septums.
Light leak.	Cutoff assemblies damaged in disassembly.	Replace damaged cutoffs.
Counter dial does not work.	Less than six septums.	Add missing septums.
	Missing septum stop.	Replace.
	Missing counter slide.	Replace.
	Broken counter slide.	Replace.
Counter dial does not advance when septum is changed -- jumps back and forth.	Detent spring broken or missing.	Replace spring.
	Detent missing.	Replace detent.
	Detent spring unhooked.	Hook spring.
	Slide stop spring weak, broken or missing.	Replace spring.
Red dot does not appear when slide is withdrawn.	Broken counter slide spring.	Replace spring.
	Septum does not move forward.	Replace any bent or damaged septums.
Red dot does not disappear when drawer is operated.	Missing septum stop. Less than six septums.	Replace with new stop. Add missing septums.
Drawer latch does not operate but latch lever does.	Drawer latch spring broken.	Replace spring.
	Drawer latch spring unhooked.	Rehook spring.
Neither drawer latch lever nor drawer latch operates.	Drawer latch spring broken or unhooked and detent spring broken or unhooked.	Check and replace springs if necessary.

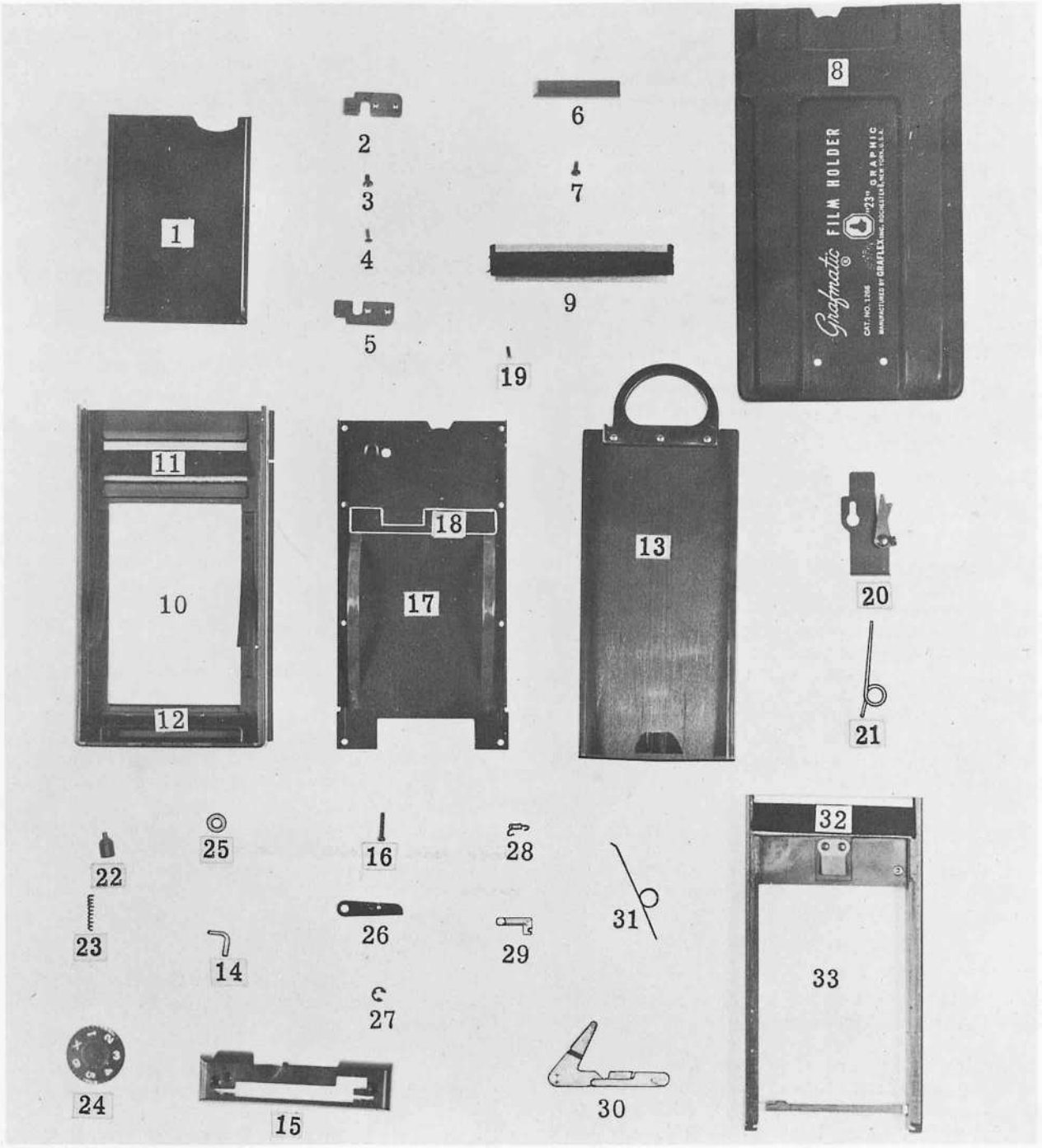

Figure 1. Grafmatic 23

4. DISASSEMBLY

a. Remove film septums (1).

b. Remove two drawer stop plates (2 and 5) by removing screws (3 and 4) and remove drawer from the Grafmatic by pulling straight out.

CAUTION: The dark slide (13) must be all the way in when the drawer is removed or the cutoff assembly (11) will be damaged.

c. Remove septum stop (6) by removing two screws (7).

d. Slide the cover (8) off the case assembly (10).

CAUTION: Insert a sheet of heavy paper or a film holder slide between the cover and case assembly before removing the cover to prevent damage to the cutoff assembly (9).

e. If necessary, remove the cutoff assembly (9) from the cover (8).

f. If necessary, remove the cutoff assembly (11) and the felt seal (12) from the case assembly (10).

g. Remove dark slide (13), from the drawer, by using a stop depressing plate (make plate from brass shim stock 0.006 in. thick, 1-1/2 x 4 inches) inserted to the end of the dark slide, between the half withdrawn dark slide and the drawer. Pull dark slide from the drawer.

h. If necessary, remove hook (14) from plate assembly (15). Remove plate assembly (15) by removing two screws (16).

i. Remove the drawer cover assembly (17) by removing eight screws (19). If necessary, remove felt seal (18).

j. Remove the counter slide assembly (20), counter spring (21), slide stop (22) and stop spring (23).

k. Remove counter dial (24) and washer (25).

l. Unhook detent spring (28) from notch on side of latch lever (30) and remove detent (26) by removing retaining ring (27). Unhook detent spring (28) from detent (26). Unhook latch spring (31) from notch on latch (29) and remove latch (29), latch lever (30) and latch spring (31).

m. If necessary, remove cutoff assembly (32) from the drawer assembly (33).

5. CLEANING

After disassembly, thoroughly clean all parts using chlorothene to remove all traces of old lubricants, toluol, acetone and EC-784 cement.

6. REASSEMBLY

a. If cutoff assembly (32) has been removed from drawer assembly (33) reassemble using 1/2 inch tape.

b. Apply small amount of grease, MIL-G-3278, to each of the two brass studs of the drawer assembly (33) and assemble latch spring (31), latch lever (30) and latch (29), hooking latch spring (31) under latch lever (30) and into notch of latch (29). Assemble detent spring (28) to detent (26) and assemble detent into place and secure with retaining ring (27). Hook detent spring to notch on side of latch lever (30).

c. Assemble washer (25) and counter dial (24).

d. Assemble stop spring (23) and slide stop (22). Apply small amount of grease, MIL-G-3278, to hole in lever of counter slide assembly (20). Assemble counter slide spring (21) to boss on drawer and insert the long end through hole on lever of counter slide assembly (20). Assemble counter slide assembly

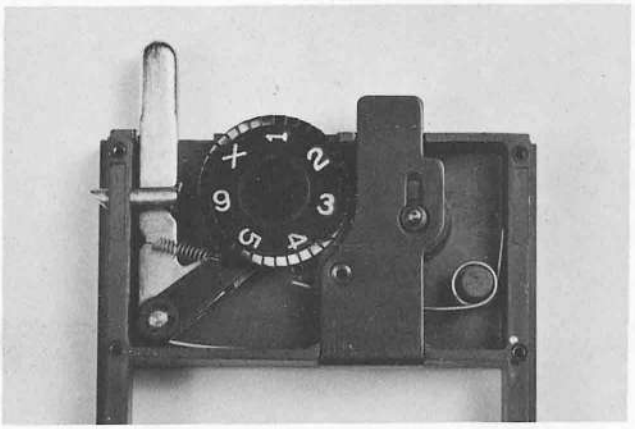

Figure 2. Counter Mechanism-Assembled

keeping the lever to the side and under the flange of the counter dial (24). See figure 2 for assembled counter mechanism.

e. If necessary, recement felt seal (18) to drawer cover assembly (17). Apply drop of Glyptol, lacquer or shellac to eight screw holes in drawer and assemble cover assembly (17) using eight screws (19). Assemble plate assembly (15) using two screws (16).

f. Assemble slide hook (14).

g. Operate the counter slide, slide stop, latch lever and counter dial making sure that none of them bind due to incorrect assembly.

h. Lubricate edges of dark slide (13) with paraffin and insert in drawer, and operate several times.

i. If necessary, recement felt seal (12) to the case assembly (10) using EC-784, and reassemble cutoff assembly (11) using 1/2 inch tape.

j. If removed, reassemble cutoff assembly (9) to cover (8) using 1/2 inch tape.

k. Slide the cover (8) onto the case assembly (10) and assemble septum stop (6) to the cover, using two screws (7).

l. Slide the dark slide all the way down in the drawer and insert drawer into assembled case and cover.

m. Turn magazine on edge, with front magazine away from repairman, pull the drawer out half way, assemble the drawer plate stops (2 and 5) and apply a drop of Glyptol, lacquer or shellac to each of the screw holes and secure with screws (3 and 4).

NOTE: After assembly, wipe off any excess Glyptol, lacquer or shellac from edge of drawer.

n. Insert film septums (1) and check correct operation of drawer latch and drawer latch lever, proper cycling of septums, and correct operation of counter mechanism.

LUBRICANTS, CLEANING SOLVENTS, ADHESIVES

Materials are specified for general reference by U. S. Government Specifications. If the recommended material cannot be located, local suppliers can advise a substitute that meets a specification number.

COMPOUND	U. S. Government Specification	Manufacturer	Use or Application
LUBRICANTS			
Neolube	Not assigned.	Huron Industries Huron, Michigan	Drawer dark slide channels Counter slide Drawer stop plates
# 44 Silicone grease (light consistency) or Texaco Unitemp	---------- MIL-G-3278	Dow Corning Corp. Midland, Michigan Texas Co.	Hole in drawer for drawer latch Hole in lever of counter slide Brass studs of drawer
Paraffin	VV-P-121a	Socony Vacuum New York, N.Y.	Edges of drawer Edges of dark slide
SOLVENTS			
Chlorothene	----------	Dow Corning Corp. Midland, Michigan	Cleaning metal parts of oil and grease
Toluol or Acetone	AN-T-541 O-A-51b	Eastman Kodak Co. Rochester, N. Y.	Removing old EC-784 Cement
ADHESIVES			
Adhesive EC-784	MIL-C-4003	Minnesota Mining & Mfg. Company Detroil, Michigan	Felt seal to cover Felt seal to case assembly.
Glyptol Cement #1276	----------	General Electric Co. Pittsfield, Mass.	Threads of machine screws

PARTS LIST

The Group Assembly Parts Lists are listed in disassembly order. The list divides the components into major assemblies, their subassemblies and parts. By the use of indented columns, the relationship of the assemblies to the subassemblies and parts is obtained.

The column titled "Figure and Index No." contains the index number in disassembly order of the items illustrated. Do not use the figure or index number in correspondence--specify the catalog or part number and name.

The column titled "nomenclature" (including numbered columns) lists item nomenclature on the Graflex drawing. The assembly in the column marked "3" will be a component of the first assembly which preceded it in the column marked "2" etc. The code "NP" will indicate that this part is "not procurable" and that the "next higher assembly" (NHA) should be ordered. The code "AR" is used for bulk items when an indefinite amount may or may not be used "as required".

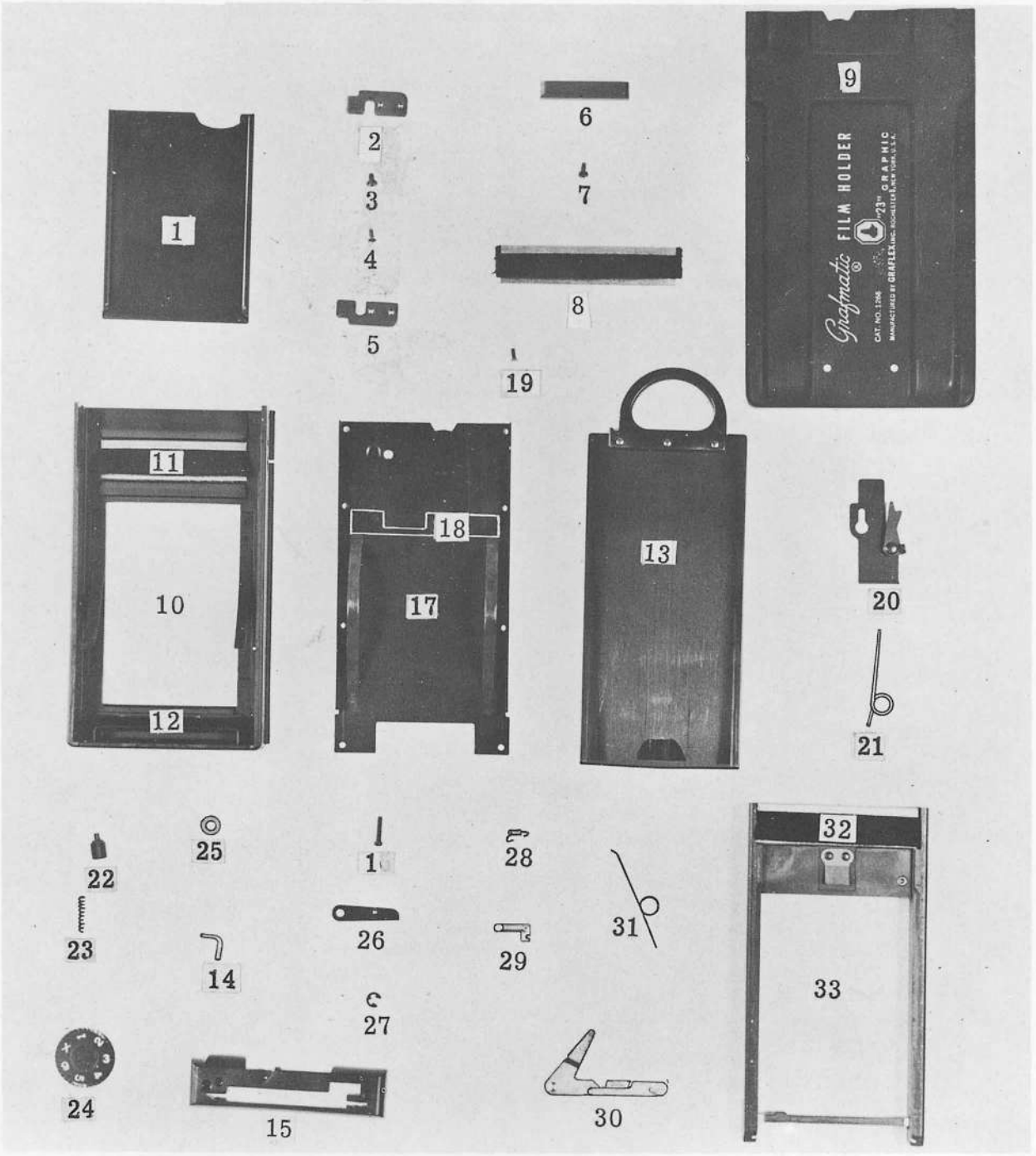

Figure 1. Grafmatic 23

Figure and Index No.	Part No.	1 2 3 4 5	Nomenclature	Qty.	Code
1-	31836G1		HOLDER COMPLETE - GRAPHIC "23" (Cat. No. 1266)	Ref.	
	31836G2		HOLDER COMPLETE - GRAFLEX "23" (Cat. No. 1166) Discontinued	Ref.	
-1	31775P1		. Septum - Film (Cat. No. 1586 for 1 ea. or Cat. No. 1558 for 6 ea.	6	
-2	31842P1		. Plate - Drawer Stop (right)	1	
	Attaching Parts				
-3	31843P2		. Screw - Machine (special)	2	
-4	104-1-3W		. Screw - Machine, No. 1-64 x 3/16, oval hd.	1	

---***---

Figure and Index No.	Part No.	1 2 3 4 5	Nomenclature	Qty.	Code
1-5	31842P2	.	Plate - Drawer Stop (left)	1	
	Attaching Part				
-3	31843P2	.	Screw - Special	2	
-4	104-1-3W	.	Screw - Machine, No. 1-64 x 3/16, oval hd	1	
	---***---				
-6	31841	.	Stop - Septum	1	
	Attaching Part				
-7	30921-5W	.	Screw - Self Threading, No. 2 x 3/16, pan hd	2	
	---***---				
-8	31770G3	.	Cutoff Assembly (3 dimples - 2.690 lg.)	1	
-9	31840P1	.	Cover - Graphic	1	
	31840P2	.	Cover - Graflex	1	
-10	31837G1	.	Case Assembly - Graphic	1	
	31837G2	.	Case Assembly - Graflex	1	
-11	31770G1	. .	Cutoff Assembly (1 dimple - 2.234 lg.)	1	
-12	31777P1	. .	Seal - Light	1	
	30363-31K	. .	Rivet (spring)	4	
	31839P1	. .	Spring - Left	1	
	31839P2	. .	Spring - Right	1	
		. .	Case (Graphic or Graflex)	NP	NHA
-13	31767G1	.	Slide Assembly - Dark	1	
-14	31909	.	Hook	1	
-15	32397G1	.	Plate Assembly	1	
	Attaching Part				
-16	106B2-6K	.	Screw - Machine, No. 2-56 x 3/8, oval fillister hd	2	
	---***---				
-17	31771G1	.	Cover Assembly - Drawer	1	
-18	31854	. .	Seal - Counter	1	
	30363-25W	. .	Rivet (spring)	4	
	31773	. .	Spring - Drawer	2	
		. .	Cover	NP	NHA
	Attaching Part				
-19	31908	.	Screw - Machine (special)	8	
	---***---				
-20	31855G1	.	Slide Assembly - Counter	1	
-21	31859	.	Spring - Counter	1	
-22	31860	.	Stop - Slide	1	
-23	30841	.	Spring - Stop	1	
-24	31850P1	.	Dial - Counter	1	
-25	30473-41	.	Washer - Flat, 0.312 x 0.128 x 0.010	1	
-26	31852P1	.	Detent	1	
	Attaching Part				
-27	251-7	.	Ring - Retaining (was P/N 30241-2)	1	
	---***---				
-28	31853	.	Spring - Detent	1	
-29	31846P1	.	Latch	1	
-30	31847P1	.	Lever - Latch	1	
-31	31848	.	Spring - Latch	1	
-32	31770G2	.	Cutoff Assembly (2 dimples - 2.437 lg.)	1	
-33	31844G1	.	Drawer Assembly	1	